CASE REPORT

Iliosigmoid knot : uncommon cause of intestinal obstruction in adults

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Abstract:

Iliosigmoid knot also known as a compound volvulus or double volvulus of ileum and sigmoid is a rare cause of intestinal obstruction, delay in diagnosis and subsequent surgical intervention can cause gangrene of both ileum and sigmoid colon with high incidence of mortality. We present a case of 35 years old Sudanese male who presented to our hospital with history of acute crampy abdominal pain, absolute constipation, infrequent vomiting, patient admitted with work up radiology which revealed a picture of volvulus sigmoid. patient underwent laparotomy which revealed wrapping of ileum around the base of sigmoid colon (double volvulus) with intact ileum and hugely distended sigmoid colon with mottling and thinning of wall, untying of ileum, resection of sigmoid with end to end anastomosis after on table colonic preparation done, patient had smooth recovery and discharged on 8th day .

Conclusion: Iliosigmoid knot (ISK) is a very rare cause of intestinal obstruction, discovered mostly intra-operatively in the course of presenting volvulus of sigmoid, Delay intervention in such case lead to dual gangrene of small and large bowel at site of twist.

Key words: Compound volvulus, ileosigmoid knot, primary resection anastomosis, on table colonic preparation.

Introduction:

Iliosigmoid knot (ISK) is a combination of ileum volvulus and sigmoid volvulus (SV) and it is a rare surgical emergency seen in adult males in 3rd -4th decade.[1-4] It forms when a loop of ileum wraps around a narrow base of an elongated sigmoid colon.[5-6] ISK is unusual entity in the west, but comparatively common in certain African, Asian and Middle Eastern nations known as volvulus belt. Etiology of ISK is controversy, and rapidly progress to gangrene of ileum as well as of sigmoid colon.[7-9]

The diagnosis of this condition is difficult and need a high index of clinical suspicion and radiological findings.[2]

Early diagnosis with early surgery is paramount importance to reduce morbidity and mortality.

Case report:

Case of 35 year old Sudanese male patient came to the causality in King Abdullah Hospital, BISHA with history of acute colicky pain, abdominal distension, and absolute constipation of 24 hours duration.

He has history of recurrent intermittent abdominal pain.

On examination, patient was vitally within normal limits and a pyrexia, abdominal examination initially not tender, mild to moderate distension, erect x-ray revealed dilated small and large bowel with multiple air fluid levels, coffee-bean sign and bent inner tube sign (Figure 1), ultrasound abdomen showed dilated loops of intestine, CT with contrast revealed dilated bowel with characteristic whirl sign (Figure 2).

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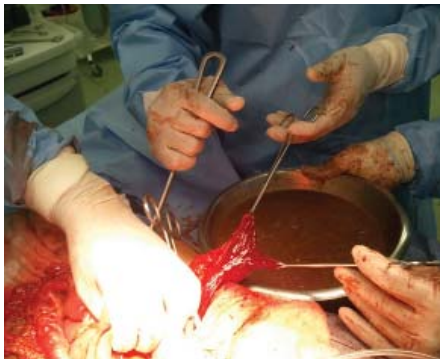

Figure 3: a loop of ileum had encircled the base of sigmoid tightly in the form of a knot

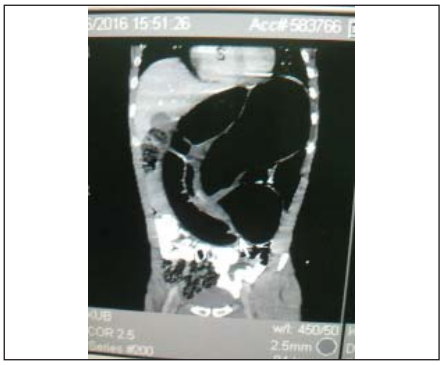

Figure 1: x-ray revealed dilated small and large bowel with multiple air fluid levels, coffee-bean sign and bent inner tube sign

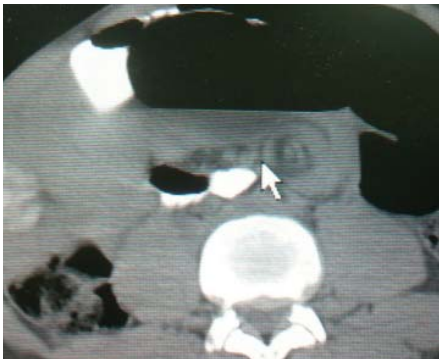

Figure 2: CT with contrast revealed dilated bowel with characteristic whirl sign

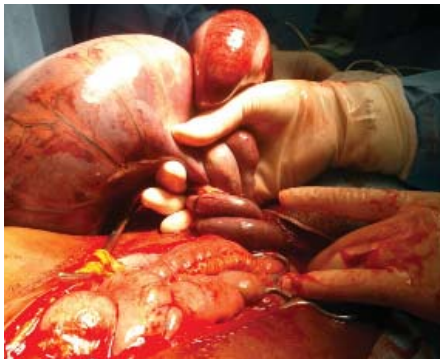

Figure 4: a loop of ileum had encircled the base of sigmoid tightly in the form of a knot

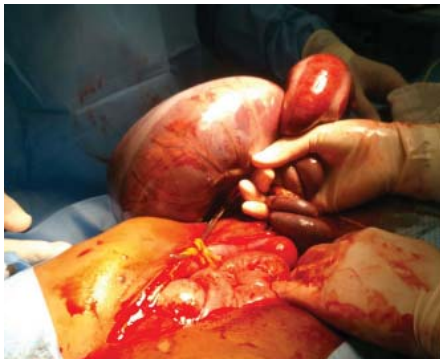

Figure 5:a loop of ileum encircling sigmoid colon causing marked dilatation of sgimoid colon

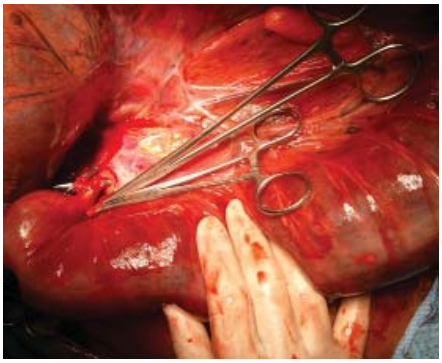

Figure 6:specimen of sigmoid valvular

Initial rectal tube with no relief. With increasing abdominal pain, abdomen more distended, patient taken up for an emergency laparotomy after initial resuscitation. On laparotomy, a loop of ileum had encircled the base of sigmoid tightly in the form of a knot (Figure 3,4) resulting in marked dilatation of sigmoid colon with thinning and mottling of sigmoid wall (Figure 5). Clamping of the sigmoid colon then detwist together with untying of the wrapped ileum from around the base of sigmoid colon, resection of sigmoid colon with end to end anastomosis done after intraoperative on table colonic preparation (Figure 6).

Patient has shown smooth recovery from surgery and sent home on 8th postoperative day.

Discussion:

Where sigmoid volvulus is common, ileosigmoid knots are found in approximately 20% of cases coming to laparotomy[7,12].Because of the high incidence of sigmoid volvulus in African and Indian patients it is usually seen in these peoples, although a recent report from Cape Town includes one white in seven cases[13]. Parker first reported Iliosigmoid knot in 1845. Other contributory factors may include a high bulk diet consumption, internal herniation, ileocecal intussusception, Meckel diverticulitis with a band, late pregnancy and floating caecum. ISK was classified only once by Alver et al.[11] in 1993. According to this classification, there are 4 types of ISK. Type I is the most common one and occurs when the ileum (active component) revolves around the sigmoid colon like our case. In Type II, the sigmoid colon (active component) revolves around the ileum. In Type III, the ileocecal portion revolves around the sigmoid colon. When it is difficult to determine the active or passive component, it remains undetermined or indefinite type (Type IV). Type I and II can be classified into subtypes of A & B depending on whether the torsion is clockwise or counterclockwise, respectively [1,2,4,6]. This classification is

clearly based on pathophysiologic and anatomicopathologic findings[4]. The authors' case was a Type I ISK. ISK can be suspected when there is a triad of small bowel obstruction, radiographic features of predominantly large bowel obstruction Whirl sign, and inability to insert a sigmoid scope. In early stages, when the bowel is not gangrenous the knot can be untied to look for vascularity and then decision regarding resection can be made, but is seldom practiced .

In our case, on table colonic preparation done followed by primary end to end anastomosis.

Conclusion:

Iliosigmoid knot as such is a very rare cause of intestinal obstruction in adults, high index of clinical suspicion together with radiological findings is needed in cases mimicking sigmoid volvulus , early and timely intervention is needed as it is a closed loop obstruction and that rapidly progress to gangrene and peritonitis . Resection of sigmoid colon with primary anastomosis after proper on table preparation gain good and satisfied prognosis .

Conflict of Interest: None

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Role and contribution of authors:

Dr Yasser M.H.Khalifa did the initial writeup, collected the references and critically reviewed the article

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